

In the Claims

1. (Currently Amended) ~~An~~ A naphthalene dioxygenase complex NDO or naphthalene dioxygenase NDO related complex comprising a plurality of polypeptides, wherein the complex or the related complex catalyzes oxidation of an aromatic substrate and comprises at least one alpha-subunit polypeptide that comprises: 1) a substituted amino acid at a the position corresponding to position 352 in NDO an alpha-subunit having SEQ ID NO: 26 , 2) a substituted amino acid at a the position corresponding to position 201, 202, 260, 316, 351, 358, 362, or 366 in NDO an alpha-subunit having SEQ ID NO: 26, or 3) a substituted amino acid at the position corresponding to position 352 in NDO, and a substituted amino acid at the position corresponding to position 201, 202, 260, 316, 351, 358, 362, or 366 in NDO an alpha-subunit having SEQ ID NO: 26, ; or 4) a eatalytically active fragment of any of 1-4 that catalyzes oxidation of an aromatic substrate.

2. (Currently Amended) The naphthalene dioxygenase NDO complex of claim 1 having an alpha-subunit that comprises an amino acid other than phenylalanine at position 352 of SEQ ID NO: 26, or a eatalytically active fragment thereof that catalyzes oxidation of an aromatic substrate.

3. (Currently Amended) The naphthalene dioxygenase NDO complex of claim 1 having an alpha-subunit that comprises a substituted amino acid at position 201, 202, 260, 316, 351, 352, 358, 362, or 366 of SEQ ID NO: 26, or a eatalytically active fragment thereof that catalyzes oxidation of an aromatic substrate.

4. (Currently Amended) The naphthalene dioxygenase NDO complex of claim 1 having an alpha-subunit that comprises a substituted amino acid at the position corresponding to position 352 ~~in NDO~~, and a substituted amino acid at the position corresponding to position 201, 202, 260, 316, 351, 358, 362, or 366 of SEQ ID NO: 26 in NDO; or a eatalytically active fragment thereof that catalyzes oxidation of an aromatic substrate.

5. (Currently Amended) The naphthalene dioxygenase ~~NDO~~ related complex of claim 1 having an alpha-subunit that comprises a substituted amino acid at the position corresponding to position 352 of SEQ ID NO: 26 in NDO; or a ~~catalytically active~~ fragment thereof that catalyzes oxidation of an aromatic substrate.

6. (Currently Amended) The naphthalene dioxygenase ~~NDO~~ related complex of claim 1 having an alpha-subunit that comprises a substituted amino acid at the position corresponding to position 201, 202, 260, 316, 351, 352, 358, 362, or 366 of SEQ ID NO: 26 in NDO; or a ~~catalytically active~~ fragment thereof that catalyzes oxidation of an aromatic substrate.

7. (Currently Amended) The naphthalene dioxygenase ~~NDO~~ related complex of claim 1 having an alpha-subunit that comprises a substituted amino acid at the position corresponding to position 352 ~~in NDO~~, and a substituted amino acid at the position corresponding to position 201, 202, 260, 316, 351, 358, 362, or 366 of SEQ ID NO: 26 in NDO; or a ~~catalytically active~~ fragment thereof that catalyzes oxidation of an aromatic substrate.

8. (Currently Amended) The naphthalene dioxygenase complex of claim 2 wherein the amino acid at position 352 is a naturally occurring amino acid.

9. (Currently Amended) The naphthalene dioxygenase complex of claim 2 wherein the alpha-subunit ~~has or~~ comprises SEQ ID NO:2, 32, 33, 34, 35, or 36.

10. (Currently Amended) The naphthalene dioxygenase complex of claim 2 wherein the alpha-subunit ~~has or~~ comprises SEQ ID NO:2.

11. (Currently Amended) The naphthalene dioxygenase related complex of claim 5 wherein the amino acid at the position corresponding to position 352 ~~in NDO~~ has been substituted with a naturally occurring amino acid.

12. (Currently Amended) The naphthalene dioxygenase related complex of claim 5 wherein the amino acid at the position corresponding to position 352 in NDO has been substituted with valine.

13. (Currently Amended) The naphthalene dioxygenase related complex of claim 5 wherein the alpha-subunit has or comprises any one of SEQ ID No: 2 No's: 14 to 24.

14-29. (Previously Cancelled)

30. (Currently Amended) The naphthalene dioxygenase NDO complex of claim 3 having an alpha-subunit that comprises alanine, glutamine, or serine at position 201.

31. (Currently Amended) The naphthalene dioxygenase NDO complex of claim 3 having an alpha-subunit that comprises leucine or valine at position 202.

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32. (Currently Amended) The naphthalene dioxygenase NDO complex of claim 3 having an alpha-subunit that comprises alanine, leucine, or asparagine at position 260.

33. (Currently Amended) The naphthalene dioxygenase NDO complex of claim 3 having an alpha-subunit that comprises alanine at position 316.

34. (Currently Amended) The naphthalene dioxygenase NDO complex of claim 3 having an alpha-subunit that comprises asparagine, arginine, or serine at position 351.

35. (Currently Amended) The naphthalene dioxygenase NDO complex of claim 3 having an alpha-subunit that comprises alanine at position 358.

36. (Currently Amended) The naphthalene dioxygenase NDO complex of claim 3 having an alpha-subunit that comprises alanine at position 362.

β² 37. (Currently Amended) The naphthalene dioxygenase ~~NDO~~ complex of claim 3 having an alpha-subunit that comprises tryptophane at position 366.

38. (Withdrawn) A oligonucleotide comprising any one of SEQ ID No's 37 and 40-55.
